PATENT APPLIC DOCKET NO.: 3558,1000-001

11/02/04

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Dino J. Farina and Donald C. Swavely

Application No.:

10/825,082

Group Art Unit: 3752

April 14, 2004

Confirmation No.:

Filed:

Title:

7176

Examiner: Not assigned

METHOD AND APPARATUS FOR MEASURING ACTUATION OF SPRAY DEVICES

CERTIFICATE OF MAILING OR TRANSMISSION I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, or is being facsimile transmitted to the United States Patent and Trademark Office on: Elaine NOV. 5, 2004 Date Signature F. laine Leah Typed or printed name of person signing certificate

## INFORMATION DISCLOSURE STATEMENT

Mail Stop Amendment Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Sir:

| This In | formation Disclosure Statement is submitted:<br>under 37 CFR 1.129(a), or<br>(First/Second submission after Final Rejection) |  |  |
|---------|--|--|--|
| [X]     | under 37 CFR 1.97(b), or (Within any one of the following time periods: three months of filir                                |  |  |

ng national application (other than a CPA) or date of entry of the national stage in an international application; or before the mailing date of a first office action on the merits in a non-provisional application, including a CPA, or a Request for Continued Examination).

| [] | under 37 CFR 1.97(c) together with either:   |
|----|--|
|    | [ ] a Statement under 37 CFR 1.97(e), as checked below, or   |
|    | $[\ ] a~\$180.00~fee~under~37~CFR~1.17(p), or\\ (\text{After the }37~CFR~1.97(b)~time~period, but before final action or notice of allowance, whichever occurs first)$ |
| [] | under 37 CFR 1.97(d) together with:  |
|    | [ ] a Statement under 37 CFR 1.97(e), as checked below, and  |

a \$180.00 fee under 37 CFR 1.17(p), or

(Filed after final action or notice of allowance, whichever occurs first, but on or before payment of the issue fee)

under 37 CFR 1.97(i): [ ] Applicant requests that the IDS and cited reference(s) be placed in the application filewrapper. (Filed after payment of issue fee)

[ ]

| Staten | nent Un         | der 37 CF                            | R 1.97(e)   |   |
|--------|-----------------|--------------------------------------|---|---|
| [ ]    | any co          | mmunica                              | formation contained in this Information Disclosure Statement was first cited in tion from a foreign patent office in a counterpart foreign application not more hs prior to the filing of this Information Disclosure Statement; or   |   |
| []     | knowl<br>in the | unication<br>edge of th<br>informati | rmation contained in this Information Disclosure Statement was cited in a<br>from a foreign patent office in a counterpart foreign application, and, to the<br>ne undersigned, after making reasonable inquiry, no item of information contained<br>on disclosure statement was known to any individual designated in 37 CFR<br>an three months prior to the filing of this Information Disclosure Statement. | d |
| Staten | nent Un         | der 37 CF                            | (Patent Term Adjustment) Applies to original applications (other than design) filed on or after May 29, 2000  | 0 |
| []     | comm<br>was no  | unication<br>ot receive              | formation contained in the Information Disclosure Statement was cited in a<br>from a foreign patent office in a counterpart application and this communication<br>d by any individual designated in § 1.56(c) more than thirty days prior to the<br>ormation Disclosure Statement.  |   |
| [X ]   | Enclos          | sed herew                            | vith is form PTO-1449:  |   |
|        | [X]             | Copies                               | of the cited non-patent references are enclosed.  |   |
|        |                 | [X ]                                 | Since this application was filed after June 30, 2003, copies of issued U.S. patents and published U.S. applications are not required and are not being provided.  |   |
|        | []              | Applica                              | of the cited references are enclosed except those entered in prior application, U.S. tion No. [ ], to which priority under 35 U.S.C. 120 is claimed. [The earlier ion contains copies of the cited references.]   |   |
|        | [X ]            | The list                             | ed references were cited in the enclosed International Search Report in a part foreign application.   |   |
|        | []              | The "co<br>under 3"                  | ncise explanation" requirement (non-English references) for reference(s) [ 7 CFR 1.98(a)(3) is satisfied by:  |   |
|        |                 | []                                   | the explanation provided on the attached sheet.   |   |
|        |                 | [] 1                                 | the explanation provided in the Specification.  |   |
|        |                 | []:                                  | submission of the enclosed International Search Report.   |   |
|        |                 | []                                   | submission of the enclosed English-language version of a foreign Search Report and/or foreign Office Action.  |   |

the enclosed English language abstract.

| []         | App   | olicant requests that the following  | non-published pending applic  | cations be considered:                                       |
|------------|---|--|---|--|
| Examiner's | :   |  |   |  |
|            |   | U.S. Patent Application No. [  | ], by [inventor(s)], filed [  | ], Docket No.: [ ]   |
|            |   | U.S. Patent Application No. [  | ], by [inventor(s)], filed [  | ], Docket No.: [ ]   |
|            |   | U.S. Patent Application No. [  | ], by [inventor(s)], filed [  | ], Docket No.: [ ]   |
|            |   | Examiner   | Date  | -  |
|            | []  | A copy of each above-cited ap  | plication, including the curre  | nt claims, is enclosed.                                      |
|            | []  | A copy of each above-cited ap<br>those entered in prior applicati<br>35 U.S.C. 120 is claimed. | plication, including the curre<br>on, U.S. Application No. [  | nt claims, is enclosed, except<br>], to which priority under |
| The E      | xami<br>nces  | ner is requested to return a copy of<br>were considered with the next office                   | the above list of pending appee communication.  | plications indicating which                                  |
| It is re   | ques  | ted that the information disclosed l   | nerein be made of record in the   | his application.   |
| Metho      | od of   | payment:   |   |  |
| []         | A c   | heck for the fee noted above is encompanying Reply. A copy of this                             | losed, or the fee has been inc<br>Statement is enclosed.  | luded in the check with the                                  |
| []         | Please charge Deposit Account 08-0380 in the amount of \$[ ]. A copy of this Statement is enclosed. |  |   |  |
| [X]        | Please charge any deficiency in fees and credit any overpayment to Deposit Account 08-0380.         |  |   |  |
|            |   | 1  | Respectfully submitted,   |  |
|            |   | 1  | HAMILTON, BROOK, SMI  | TH & REYNOLDS, P.C.  |
|            |   |  | By Tall Polomo<br>Mark B. Solomon<br>Registration No.: 44,348<br>Telephone: (978) 341-0036<br>Facsimile: (978) 341-0136 |  |

Concord, MA 01742-9133 Dated: 11/5/04

<del>3752</del> 2856

INFORMATION DISCLOSURE CITATION IN AN APPLICATION OIPF

PTO-1449 REPRODUCED

October 18, 2004 (Use several sheets if necessary) ATTORNEY DOCKET NO 3558.1000-001 FIRST NAMED INVENTOR

Dino J. Farina

Not assigned

EXAMINER Gunnar Gissell 7176

FILING DATE April 14, 2004 CONFIRMATION NO. GROUP

APPLICATION NO.

10/825,082

NOTE B D WAY EN A TRAVERS U.S. PATENT DOCUMENTS EXAM-ISSUE DATE / NAME OF PATENTEE OR APPLICANT REF DOCUMENT NUMBER INER PUBLICATION DATE INI. NO. Number-Kind Code (if known) OF CITED DOCUMENT MM-DD-YYYY TIAL /GJG/ AA 04/18/1995 Funkenbusch et al. Re 34,910 4.357.670 11/02/1982 McFarlane ΔR 4.415.265 11/15/1983 Campillo et al. AC ۸D 4,614,300 09/30/1986 Falcoff Kaneko et al. ΑE 4,965,841 10/23/1990 4.992.952 02/12/1991 Sasaki AF AG 5.075.014 12/24/1991 Sullivan 5,337,926 08/16/1994 Drobish et al. Krone-Schmidt et al. AI 5,561,527 10/01/1996 5.879.713 03/09/1999 Roth et al. AJ ΑK 6.149,071 11/21/2001 MacCallumMhor et al. AA2 6,193,936 B1 02/23/2001 Gardner et al. AB2 6,256,597 B1 07/03/2001 Wang et al. AC2 6,508,112 B1 Verhoeven 01/21/2003 AD2 AE2 AF2 AG2 AH2 AI2 AJ2 AK2 AA3 AB3 AC3

EXAMINER

/Gunnar Gissel/

DATE CONSIDERED

11/18/2008

GROUP 3752 2856

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## INFORMATION DISCLOSURE CITATION IN AN APPLICATION

October 18, 2004
(Use several sheets if necessary)

| ATTORNEY DOCKET NO. 3558.1000-001 |
|-----------------------------------|
| FIRST NAMED INVENTOR              |

EXAMINER Gunnar Gissel CONFIRMATION NO.

Dino J. Farina

Not assigned

APPLICATION NO. 10/825,082

7176

FILING DATE April 14, 2004

| FOREIGN PATENT DOCUMENTS |     |  |                    |  |              |              |
|--------------------------|-----|--|--------------------|--|--------------|--------------|
|                          |     | DOCUMENT NUMBER<br>Country Code-Number-Kind Code<br>(if known) | DATE<br>MM-DD-YYYY | NAME OF PATENTEE OR APPLICANT<br>OF CITED DOCUMENT | TRANS<br>YES | LATION<br>NO |
| /GJG/                    | AL  | WO 03/000429 A2  | 01/03/2003         | Image Therm Engineering                            |              |              |
|                          | AM  |  |                    |  |              |              |
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EXAMINER /Gunnar Gissel/ DATE CONSIDERED 11/18/2008

AP4 AO4

|  |                                      |               |                               | Sheet 3            |  |
|--|--------------------------------------|---------------|-------------------------------|--------------------|--|
| PTÖ-1449 REPRODUCED                                | ATTORNEY DOCKET NO.<br>3558.1000-001 |               | APPLICATION NO.<br>10/825,082 |                    |  |
| INFORMATION DISCLOSURE CITATION IN AN APPLICATION  |                                      |               | FILING DATE<br>April 14, 20   |                    |  |
| October 18, 2004 (Use several sheets if necessary) | EXAMINER Gunnar Gissell              | CONFI<br>7176 | RMATION NO.                   | GROUP<br>3752 2856 |  |

|      |      | OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)   |
|------|------|--|
| /GJG | j/AR | Dvorak, P., "How to See Aerosol Spray Patterns and Plumes," <i>Machine Design</i> , 72(13): 122 (2000, July 6).  |
|      | AS   | Badreldin, Amira M., "Real-Time Analysis of Fuel Spray Images," IEEE, pp. 622-624 (1987).  |
|      | AT   | Lopera, J. F. G., et al., "Improved Entropic Edge-Detection." Paper supported by grant MAR97-0464-C04-02 of Spanish Government. No date given.   |
|      | AU   | Pastor, J. V., et al., "Analysis Methodology of Diesel Spray and Flame by Means of In-Cylinder Endoscopic Imaging," (The Institution of Electrical Engineers). Savoy Place, London: IEE (2000).  |
|      | AV   | Sellens, Rick and Deljouravesh, Rama, "Non-Orthogonal Optical Spray Pattern Analysis," Ninth International Symposium on Applications of Laser Techniques to Fluid Mechanics, Lisbon, Portugal, July 1998.  |
|      | AW   | Sankar, S.V., et al., "Time-Resolved Measurement of Liquid Mass Distribution in a Fuel Injector Spray Using an Optical Patternator," Institute for Liquid Atomization and Spray Systems, ILASS Americas '97, pp. 266-270, Ottawa, ON, Canada, May 18-21, 1997. |
|      | AX   | Wang, G., et al., "An Optical Spray Pattern Analyzer," Institute for Liquid Atomization and Spray Systems, ILASS Americas '97, pp. 261-265, Ottawa, ON, Canada, May 18-21, 1997.   |
|      | AY   |  |
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|      | AR2  |  |
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|      | AT2  |  |
|      | AU2  |  |
|      | AV2  |  |

| EXAMINER | /Gunnar Gissel/ | DATE CONSIDERED | 11/18/2008 |
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